

# Tundra Bean Geese *Anser fabalis rossicus* in central and southern Sweden autumn 2009–spring 2012

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**Abstract.** Daytime counts at 35 staging/wintering sites in 2009–2012 revealed that total numbers of Tundra Bean Geese *Anser fabalis rossicus* present in central and southern Sweden often reached 5000–10000. In mild winters, many of these birds stay in Sweden, mainly in the Hammarsjön area, in NE Scania. These findings show that the current population size of the Taiga Bean Goose *A. f. fabalis* is seriously over-estimated.

**Key words:** Tundra Bean Goose, Taiga Bean Goose, population estimate, flyway, conservation

## INTRODUCTION

In Europe, the Tundra Bean Goose *Anser fabalis rossicus* is far more numerous than the Taiga Bean Goose *Anser fabalis fabalis* (Fox et al. 2010), and in many staging and wintering areas, only small numbers of Taiga Bean Geese are present among a multitude of Tundra Bean Geese. In Sweden, the situation is reversed, because here the vast majority of Bean Geese are Taiga Bean Geese (Nilsson & Månsson 2012). During goose counts under suboptimal conditions for the separation of these two subspecies (e.g. roost-flight counts or under poor observational conditions), all Bean Geese are commonly assumed to belong to the presumably commonest subspecies, in Sweden the Taiga Bean Goose. This reinforces the general conception among birdwatchers that the rare subspecies is really rare, and that there is no real reason to separate and report the different subspecies. In the Swedish Report System For Birds (“Svalan”) only 0.3% of the 1.5 million Bean Geese reported up to July 2009 were classified at the subspecies level, despite the technical option to do so (de Jong 2010b). The Swedish goose counts do not distinguish between *fabalis* and *rossicus* Bean Geese, but the results are reported as Taiga Bean Geese to Wetland International (Nilsson 2000, Kampe-Persson 2011).

Given the limited population size and the recent decline of the Taiga Bean Goose population (Fox et al. 2010), uncertainty about the subspecies structure in Sweden, the dominant country for Taiga Bean Geese, is a serious problem for conservation and management. In order to clarify the numbers of staging and wintering Tundra Bean Geese in Sweden, and thus to improve the Taiga Bean Goose population estimates, we conducted subspecies level day-time counts of Bean Geese at

the major staging and wintering sites in southern and central Sweden. An additional aim was to locate the wintering areas of the recently discovered North-west European population of the Tundra Bean Goose (Aarvak & Øien 2009, Heinicke 2010). Birds of this population had been neck-banded during wing-moult in northern Norway (de Jong 2010a) and during spring migration in northern Sweden (Heinicke 2010, Nilsson et al. 2010), but very few had been reported by Swedish birdwatchers.

## METHODS

Sites were selected on the basis of information from the international goose counts in Sweden ([http://www.zoo.ekol.lu.se/waterfowl/index\\_e.htm](http://www.zoo.ekol.lu.se/waterfowl/index_e.htm)), the Swedish Report System For Birds (<http://www.artportalen.se/birds/default.asp>) and local birdwatchers (Appendix 1). Additional sites were found because they appeared “promising” on maps and satellite/aerial images. All counts were made by Thomas Heinicke between September 2009 and April 2012 (Table 1), and each counting trip was planned to fit the current information about the distribution of the geese and time-constrained logistics (Appendix 1). The timing of the trips in September, October, November and January aimed to coincide with the international goose count dates as far as was possible.

The surveys (counts and neck-band searches) were carried out during day-time at feeding and resting areas. These farmland areas were usually within 10 km from the night-roost (c.f. Nilsson & Persson 1984). Unlike roost-flight counts, this method enables reliable distinction of Taiga and Tundra Bean Geese, because the geese can be closely examined by telescope over

Table 1. Total counts of Tundra Bean Geese during 2009–2012 in southern and central Sweden (Appendix 1 for site coverage).

Period	Number of birds	Comment
Sept 2009	1620	
Oct 2009	9195	
Jan 2010	1208	
April 2010	1145	
Sept 2010	1626	
Oct 2010	5763	
Nov 2010	5433	
Jan 2011	61	Severe winter
March 2011	2722	
April 2011	2515	
Sept 2011	104	Geese arrived later
Oct 2011	7793	
Nov 2011	4455	
Jan 2012	5373	Mild winter
March 2012	3745	
April 2012	2963	

substantial periods of time. During the course of our study, gradually more feeding areas were detected around most roosts, e.g. additional areas were found each year west and southwest of the Hammarsjön roost. New areas were found by following geese leaving the night-roost or simply by scanning potential farmland areas within reasonable distances from the roost. This variable, but gradually improving, spatial coverage means that the results should be seen as minimum numbers that are not fully comparable between counting events.

## RESULTS AND DISCUSSION

Single birds or small flocks of Tundra Bean Geese were detected at most of the surveyed sites, but >100 rossicus were only found at the following sites (Figure 1, Table 2): Östen, Tåkern, Kvismaren and Ledskärsviken in central Sweden, and Hammarsjön, Trolle-Ljungby, Mörlunda/Hultsfred and Mörbylanga/Öland in southern Sweden. Tundra Bean Goose numbers >1000



Figure 1. Goose staging and wintering sites in central and southern Sweden where substantial numbers of Tundra Bean Geese were found. Large dots: >1000 individuals, small dots: >100 individuals. Sites with daily totals >1000 were Kvismaren, Östen, Tåkern and Hammarsjön. Segersjön, a sub-site of Kvismaren, also reached the >1000 level.

Table 2. Maximum numbers of Tundra Bean Geese observed during this study over counting months and the four major staging/wintering sites (see Appendix 1 for schedule of counts).

Site	Sept	Oct	Nov	Jan	March	April
Tåkern	1320	2340	185	-	500	612
Kvismaren	277	4090	0	-	756	274
Östen	681	2732	6	-	2244	1875
Hammarsjön	-	14	5042	4988	2712	-

were counted at sites Kvismaren, Östen, Tåkern and Hammarsjön (Figure 1).

The highest overall number per count session was 9,195 individuals (October 2009, Table 1), but another four (25%) of the counts produced totals of >5000 geese. The highest numbers were recorded during the October counts, but also in January >5000 geese were present under mild winter conditions (2011/12, Table 1).

During autumn migration (Sept-Oct), most Tundra Bean Geese concentrated around Lakes Östen, Tåkern

and Kvismaren (central Sweden), where numbers regularly exceeded 1000 birds per site (Table 2). During the winter months (Nov–March), Lake Hammarsjön near Kristianstad, NE Skåne was the most important site; with over 5000 birds present (November 2010). In mid-April, concentrations of several hundred *rossicus* were found at the following places in central Sweden: Östen, Tåkern and Ledskärsviken.

The presence of substantial numbers of Tundra Bean Geese has been questioned by Swedish birdwatchers, including goose counters. In a recent summary, Kampe-



Figure 2. Observations of neck-banded Tundra Bean Geese in central and southern Sweden. Red dots: birds neck-banded in Scandinavia (Norway and Sweden) since 2009, yellow dots: birds neck-banded outside Scandinavia (Russia, Germany, The Netherlands) since 2006. Source: [www.geese.org](http://www.geese.org).



Table 3. Sightings in southern and central Sweden of Tundra Bean Geese neck-banded in and outside Scandinavia. Source: [www.geese.org](http://www.geese.org). Birds neck-banded outside Scandinavia were marked in Russia, Germany or The Netherlands. Many birds were observed at multiple sites and/or in multiple years, but the number of individuals for a site (e.g. 59 for Hammarsjön) refers to the total number of unique individuals seen at this site. The sites Ystad, Vombsjön and Ringsjön are in southern Scania.

Site	Neck-banded in Scandinavia N individuals (N sightings)	Neck-banded outside Scandinavia N individuals (N sightings)
Östen	38 (102)	3 (6)
Tåkern	40 (160)	3 (3)
Kvismaren	11 (33)	1 (1)
Hammarsjön	59 (257)	2 (3)
Tidaholm	4 (13)	
Ledskär	4 (11)	
Skatelöv	1 (1)	
Målilla	1 (1)	
Ystad	1 (1)	
Vombsjön	3 (4)	
Ringsjön	2 (2)	
Grytåsen, Mölltorp	1 (1)	
Hjälstaviken	1 (1)	
Flinesjön, Hedemora	1 (1)	
Fläcksjön, Salbohed	5 (8)	
Tämnaren	2 (2)	
Hällsmyran, E. Tärnsjö	2 (2)	
Lidhemssjön, Växjö		1 (1)
Mörbylånga, Öland		2 (9)
Gotland, northern part		2 (14)
Stigtomta		3 (9)

Persson (2011) reported that he generally found small proportions (<10%) of rossicus birds during his 1997–2011 Bean Goose counts in the southern parts of Scania, and argued that these proportions were likely to be representative for the rest of Sweden in mid-winter. For autumn counts he concluded that pre-2011 conditions were impossible to verify, but indicated that our findings correlated with a substantial increase in Tundra Bean Geese numbers in Sweden during the past 5–10 years, for which he claimed, but did not report, the existence of strong indications.

The assumption that the Tundra Bean Goose data from southern Scania are representative for the rest of Sweden is contradicted by the fact (a) that only a small proportion (<3%) of the Tundra Bean Geese in our counts were observed here, and (b) that only 1% of the neck-band sightings were reported from southern Scania, despite particularly intensive neck-band reading in this region (Figure 2, Table 3, Nilsson 2011). Instead, Tundra Bean Geese seem to be concentrated at specific sites (Figure 1) where they have not been separated from Taiga Bean Geese during previous goose counts. After a recent Bean Goose identification event at Tåkern (20 Oct. 2012), several of the experienced goose counters acknowledged the presence of substantial numbers

of Tundra Bean Geese which they had previously overlooked (e.g. Peter Berglin, pers. comm.).

Thanks to the Tundra Bean Geese neck-banded in northern Norway, northern Sweden and outside Scandinavia, good numbers of neck-bands are currently present among staging and wintering Bean Geese. The pattern of Tundra Bean Goose neck-band sightings ([www.geese.org](http://www.geese.org), Figure 2) strongly supports the classification of Bean Geese in our counts. This pattern also indicates that the Tundra Bean Geese in Sweden are of different origin, with some areas holding only Scandinavian birds and others only eastern ones (Figure 2).

Our conclusion is that, since 2009, autumn numbers of Tundra Bean Geese in Sweden commonly ranged between 5000 and 10000 individuals, and given a likely but unknown turn-over rate, the total numbers visiting Sweden may be substantial higher. Also, during mild winters, a large proportion of these Tundra Bean Geese stay in Sweden, mainly in the Hammarsjön area. How conditions were before 2009 cannot be known for sure, but, in contrast to Kampe-Persson (2011), we argue that there is no strong evidence for a major increase over the last decades.

Based on this conclusion, the population estimate

of Taiga Bean Geese has to be adjusted downward. Taking the Swedish October count data as a standard, the Swedish part of the Taiga Bean Goose population should be reduced by approximately 15% (7500 out of 50000). This underlines the severity of the situation the Taiga Bean Goose population is in, and calls for urgent conservation and management measures.

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